

AMENDMENTS TO THE SPECIFICATION

Please make the following amendments to the specification:

(Page 8, second paragraph):

Finally, the eq_xeye signal 27 is used to derive the timing phase error. The equation for deriving the timing phase error is as follows:

$$t_e = y_e \cdot x_r - x_e \cdot y_r$$

where the result is the product of the ~~constellation vector~~ eq_xeye signal 27 and the reference vector 30. This result shows how much the eq_xeye 27 signal has rotated in relation to the ideal reference vector 30. As is known in the art, the circuit may use the phase rotated vector (X'_r , Y'_r) 32, to derive the timing phase error, the difference is that the phase corrector in such a circuit will be a 360 degree phase corrector. In contrast, the present embodiment utilizes a phase corrector 36 that can correct up to one radian of error. Back to the present embodiment the timing error resulting from multiplier 39 is then multiplied by a scalar 40, 2^4 in this embodiment, and is input to a leaky integrator 41 which calculates the average timing phase error. The other input to the leaky integrator 41 is communicated from the centroid error 48 which is combined via adder 42 to the scaled timing phase error and integrated 41. It should be added that in DMT, there should be no centroid error calculation unless the DMT equalizer adaptively updates its coefficients.